

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

1. (Currently amended) A method, comprising:

acquiring aerial images of a reticle containing a design pattern, wherein the aerial images are acquired for different values of a member of a set of lithographic variables, and wherein one of the different values represents a reference member value;

inspecting the reticle for non-transient defects; and

determining a presence of an anomaly in the design pattern~~transient repeating defects on the reticle by subtracting the non-transient defects from the aerial images and~~
~~comparing at least one pair of the aerial images corresponding to at least two of the different values, wherein one of the at least two of the different values represents the reference member value, and wherein the transient repeating defects are defects that will print under only a portion of the different values.~~

2. (Canceled)

3. (Original) The method of claim 1, wherein the member comprises illumination focus, exposure, degree of partial coherence, illumination mode, or numerical aperture.

4. (Original) The method of claim 1, wherein the reticle is a single die reticle or a multi-die reticle.

5. (Currently amended) The method of claim 1, wherein the ~~anomaly comprises a design pattern defect~~~~transient repeating defects~~ comprise design pattern defects.

6. (Currently amended) The method of claim 1, wherein the ~~anomaly comprises a reticle enhancement technique defect~~~~transient repeating defects~~ comprise reticle enhancement technique defects.

7. (Canceled)

8. (Original) The method of claim 1, wherein the aerial images are acquired with different detectors having the different values.

9. (Currently amended) The method of claim 1, ~~further comprising wherein~~ said inspecting the reticle for ~~other types of anomalies~~ is performed using one of the aerial images, ~~and~~ wherein the ~~other types of anomalies~~~~non-transient defects~~ comprise reticle manufacturing errors and contaminants.

10. (Currently amended) The method of claim 9₁, wherein said inspecting comprises a die-to-database comparison or a die-to-die comparison.

11. (Original) The method of claim 1, further comprising prior to said determining, preprocessing the at least one pair of the aerial images to remove relatively high intensity values and relatively low intensity values from the at least one pair of the aerial images.

12. (Currently amended) The method of claim 1, further comprising identifying regions of the reticle for review based on ~~a location~~~~locations~~ of the ~~anomaly~~~~transient repeating defects~~.

13. (Original) The method of claim 12, wherein the review comprises aerial image review at varying levels of optical conditions.

14. (Currently amended) The method of claim 1, wherein if more than one anomaly transient repeating defect is found in the design pattern on the reticle, the method further comprises binning the more than one anomaly transient repeating defect according to regions of the reticle proximate the more than one anomaly transient repeating defect.

15. (Original) The method of claim 1, further comprising determining a process window for a lithography process to be carried out using the reticle.

16. (Currently amended) The method of claim 1, further comprising determining a critical status of the anomaly transient repeating defects.

17. (Currently amended) A method, comprising:

acquiring aerial images of a reticle containing a design pattern, wherein the aerial images are acquired for different values of a member of a set of lithographic variables;

inspecting the reticle for non-transient defects;

determining a presence of transient repeating defects on the reticle by subtracting the non-transient defects from the aerial images and comparing at least one pair of the aerial images corresponding to at least two of the different values to find areas on the reticle in which anomalies the transient repeating defects in the design pattern on the reticle are located, wherein the transient repeating defects are defects that will print under only a portion of the different values; and

determining which of the areas on the reticle where a lithography process using the reticle is most susceptible to failure based on results of said comparing.

18. (Original) The method of claim 17, wherein one of the different values represents a reference member value.

19. (Currently amended) The method of claim 18, wherein the area that is most susceptible to failure comprises anomalies transient repeating defects that are common to the at least one pair of the aerial images not acquired at the reference member value and that are not common to the aerial image acquired at the reference member value.

20. (Previously presented) A method, comprising:

inspecting a reticle containing a design pattern for non-transient defects;

acquiring aerial images of the reticle for different values of a member of a set of lithographic variables; and

determining a presence of transient repeating defects on the reticle by subtracting the non-transient defects from the aerial images and comparing at least one pair of the aerial images corresponding to at least two of the different values, wherein the transient repeating defects are defects that will print under only a portion of the different values.

21. (Original) The method of claim 20, wherein said inspecting and said acquiring are performed substantially simultaneously.

22. (Original) The method of claim 20, wherein said inspecting comprises aerial imaging of the reticle at a reference member value of the set of the lithographic variables.

23. (Original) The method of claim 20, wherein said inspecting is performed using a non-aerial imaging reticle inspection system.

24. (Original) The method of claim 20, wherein said inspecting comprises a die-to-database comparison or a die-to-die comparison.

25. (Original) The method of claim 20, further comprising determining a process window for a lithography process to be carried out using the reticle based on the transient repeating defects.

26. (Original) The method of claim 20, wherein the non-transient defects comprise reticle manufacturing errors or contaminants on the reticle.

27. (Currently amended) The method of claim 1, wherein if more than one anomaly-transient repeating defect is found in the design pattern on the reticle, the method further comprises binning the more than one anomaly-transient repeating defect by appearance of regions of the reticle immediately surrounding the transient repeating defects.

28. (Currently amended) The method of claim 1, wherein if more than one anomaly-transient repeating defect is found in the design pattern on the reticle, the method further comprises binning the more than one anomaly-transient repeating defect by patterns surrounding the transient repeating defects.